

***FlyBy Math™* Alignment**  
**Academic Standards for Mathematics**

**2.2 Computation and Estimation**

**2.2.5 Grade 5 Standard**

G. Apply estimation strategies to a variety of problems including time and money.

***FlyBy Math™* Activities**

--Predict outcomes and explain results of mathematical models and experiments.

**2.3 Measurement and Estimation**

**2.3.5 Grade 5 Standard**

A. Select and use appropriate instruments and units for measuring quantities (e.g., perimeter, volume, area, weight, time, temperature).

***FlyBy Math™* Activities**

--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

B. Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter and area.

--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

C. Estimate, refine and verify specified measurements of objects.

--Predict outcomes and explain results of mathematical models and experiments.

--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

**2.4 Mathematical Reasoning and Connections**

**2.4.5 Grade 5 Standard**

B. Use models, number facts, properties and relationships to check and verify predictions and explain reasoning.

***FlyBy Math™* Activities**

--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

C. Draw inductive and deductive conclusions within mathematical contexts.

--Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

**2.5 Mathematical Problem Solving and Communication**

**2.5.5 Grade 5 Standard**

A. Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, check whether an answer makes sense and

***FlyBy Math™* Activities**

--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

--Explain and justify solutions regarding the motion of

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| explain how the problem was solved.                                                                                                    | two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.                                                                                                                                         |
| B. Use appropriate mathematical terms, vocabulary, language symbols and graphs to explain clearly and logically solutions to problems. | --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.                                                                                 |
| C. Show ideas in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams and models.          | --Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.                                                                                                                          |
| D. Connect, extend and generalize problem solutions to other concepts, problems and circumstances in mathematics.                      | --Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.                                                                                                                                                                                       |
| E. Select, use and justify the methods, materials and strategies used to solve problems.                                               | --Use tables, graphs, and equations to solve aircraft conflict problems.<br><br>--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. |
| F. Use appropriate problem-solving strategies (e.g., solving a simpler problem, drawing a picture or diagram).                         | --Use tables, graphs, and equations to solve aircraft conflict problems.                                                                                                                                                                                                                  |

## 2.8 Algebra and Functions

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| <b>2.8.5 Grade 5 Standard</b>                                                                           | <b><i>FlyBy Math™</i> Activities</b>                                                                                                                             |
| F. Describe a realistic situation using information given in equations, inequalities, tables or graphs. | --Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |
| H. Locate and identify points on a coordinate system.                                                   | --Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.             |
| I. Generate functions from tables of data and relate data to corresponding graphs and functions.        | --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.                |

## 2.11 Concepts of Calculus

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| <b>2.11.5 Grade 5 Standard</b>                                 | <b><i>FlyBy Math™</i> Activities</b>                                                                                                              |
| D. Describe the relationship between rates of change and time. | --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. |